SERIES SIX
PROGRAMMABLE CONTROLLERS

GFK-0065

Source Voltage
100 to 150 V dc
Output Voltage
+5, +12, -12 V dc

125 V DC INPUT CPU POWER SUPPLY MODULE

GENERAL DESCRIPTION

The 125 V dc Input CPU Power Supply Module, used in the Central Processor Unit (CPU), is available to be used with a power source from 100 to 150 V dc. The features and benefits of this module are summarized in Table 1.

The 125 V dc Input CPU Power Supply Module provides regulated +12, -12 and +5 dc voltages to the rack backplane. The input (or source voltage) is applied to terminals on the front panel, then routed through a switch and fuse to a switching power supply. For a given load the input power drain remains essentially constant The power supply is protected against polarity reversal of the dc Input.

The module provides electromechanical relay contacts for connection to user indicators, or any device to be activated during an alarm condition. The module also provides a voltage regulator for an opt ional, auxiliary battery that provides battery back-up of Complementary Metal-Oxide Semiconductor (CMOS) memory contained in the processor rack.

A Keyswitch mounted on the front panel is used to select either the RUN or the STOP mode for the processor; a second Keyswitch allows the user to protect the contents of the processor memories by placing them in a READ ONLY mode. The same key operates both Keyswitches. Refer to Table 2 for the CPU Power Supply module specifications.

The 125 V dc input CPU Power Supply Module may be used in place of a 115/230 V ac or a 24 V dc Input CPU Power Supply Module in an existing rack if 125 V dc input is desired.

TABLE 1. FEATURES AND BENEFITS

FEATURES	BENEFITS
Uses dc input power source.	Extends power source compatibility to 125 V dc systems.
Can be used in any CPU rack.	Reduced spare-parts inventory.
Provides electromechanical-relay contacts for alarm indications.	Activates user-supplied power indicators.
Contains voltage regulator for auxiliary battery.	External battery back-up of CMOS memory.

Table 2. SPECIFICATIONS

Input: 100 to 50 V dc, 2 A max.

output:
1. +5 V dc, 16.5 A max.
2. +I2 V dc, 1.5 A max.
3. -12 V dc, 1.0 A max.
4. +I2 V dc, 2.0 A max.

Total power from all outputs must be less than 90 watts.

Output number 4 rated at 12.0 V dc nominal when output supply currents are:
(I) +5 V dc @ 8.0 A
(2) +12 V dc @ 1 .0 A
(3) -12 V dc @ 0.5 A
(4) +12 V dc @ 1.0 A

Allowable Power Interruptions:
4ms minimum at 100 V dc line.

Noise Immunity: **Meets requirements of NEMA KS 2-230 and ANSI C37.90A.**

Altitude: **Up to 10,000 feet (3,000 meters) above sea level.**

Auxiliary Battery Input:
8-28 V dc

Dimensions: **12.46 x 9.00 x 2.75 (inches) 317 x 229 x 70 (mm)**

Operating Temperature:
0°C to 60°C (outside of the rack)

Storage Temperature:
-20°C to +80°C

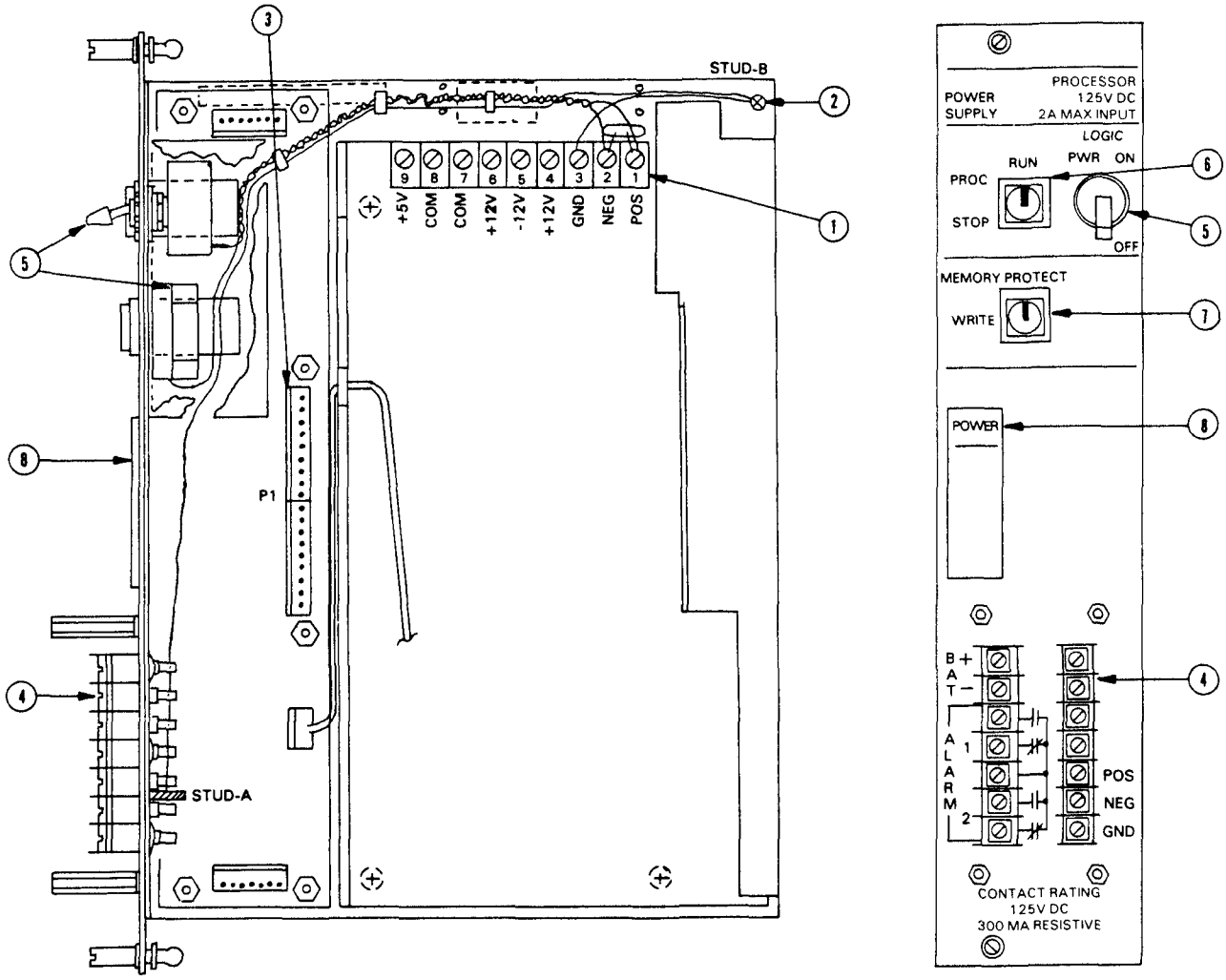
Humidity: 5% to 95% (non-condensing)

INSTALLATION

These steps define the procedures to be followed when a power supply is to be replaced on a Series Six or Six Plus CPU rack. The tools needed are a regular screwdriver, Phillips screwdriver, and a 5/16" wrench or nut driver.

1. **Stop the system by switching the top key on the CPU to "STOP".**
2. **Switch off all units in the system, including the user's power supplies.**
3. **Remove all power from the system, preferably at the source (i.e. throw the main circuit breaker for the system).**
4. **Locate the power supply to be changed. The power supply is in the far right side of the CPU rack.**
5. **Remove the plastic cover on the lower portion of the power supply to be replaced and using a volt-meter, make sure there is no dc power present.**
6. **Take note of the location and color of the dc wires and then remove them. Also, remove Auxiliary battery and/or Alarm connection(s) noting location, color, and polarity for correct replacement.**

Ref. PC-S6-84-0243
Ref. PC-S6-84-0244



SIDE VIEW

FRONT PANEL

1 Internal Terminal Strip (Refer to Figure 2)

2 Chassis Ground Terminal

3 18-Pin Connector: Connects signal cable from rack backplane

4 Front-Panel Connector Block (Refer to Figure 3)

5 Power Switch/Fuse

6 CPU RUN/STOP Keyswitch

7 MEMORY PROTECT Keyswitch

8 POWER Light

On: The voltage levels of all three DC outputs (+12V, -12V, +5V) are within tolerance

Off: At least one of these voltage levels is too low

FIGURE 1. USER ITEMS

lNSTALLATlON (Continued)

7. At the top and bottom of the power supply, there are l/4-turn thumbscrews. To loosen, turn the thumbscrews approximately l/4 turn counterclockwise.

8. Grasp the thumbscrews and gently pull outward. Be careful not to damage the internal wiring while pul l ing the supply out.

9. Locate the wires that extend from the back of the rack to the terminal on the power supply. These wires should be labeled or stamped with their location; the circuit boards have wire locations stamped on them. Remove these wires. There is also a plastic wire clamp holding these wires in place. Detach this from the frame if there is not a similar item on the replacement power supply, or cut the clamp if there is one on the new supply.

   Remove the 18-pin (P1) m o l e x connector that is on the narrow board in the front part of the power supply. The power supply should now be completely detached from the rack.

10. Take the replacement power supply and attach the wires as shown in Figure 2. Be sure to connect the 18-pin molex connector (P1) to the power supply. Attach the wire clamp on the upper stud of the power supply frame, or if there is a clamp already there, wrap the wires in it.

11. Slide the power supply into the rack, being careful not to damage the wires. When the power supply is all the way in, turn the thumbscrews clockwise until they lock in.

12. Remove the plastic cover on the lower portion of the power supply and attach the DC wires, as well as the battery and alarm wires, as they were on the original supply (Refer to Step 6 and Figure 3). Replace the plastic cover.

13. Verify that the DC input lines are of the correct polarity before applying power. An inadvertant reversal of input polarity will cause the supply to draw excessive currents and may blow the internal fuse (2A slo-blow) which must then be replaced before proper operation can be resumed.

14. Restore system power. Turn on the CPU unit. Check to see if the POWER light is on. If it is, turn on the rest of the system and resume normal operation.

15. If the POWER light does not come on, the power supply may be bad, source voltage may not be turned on, or there may be other problems within the rack. Please call your local authorized GE Fanuc Automation Distributor or Sales off ice for assistance.

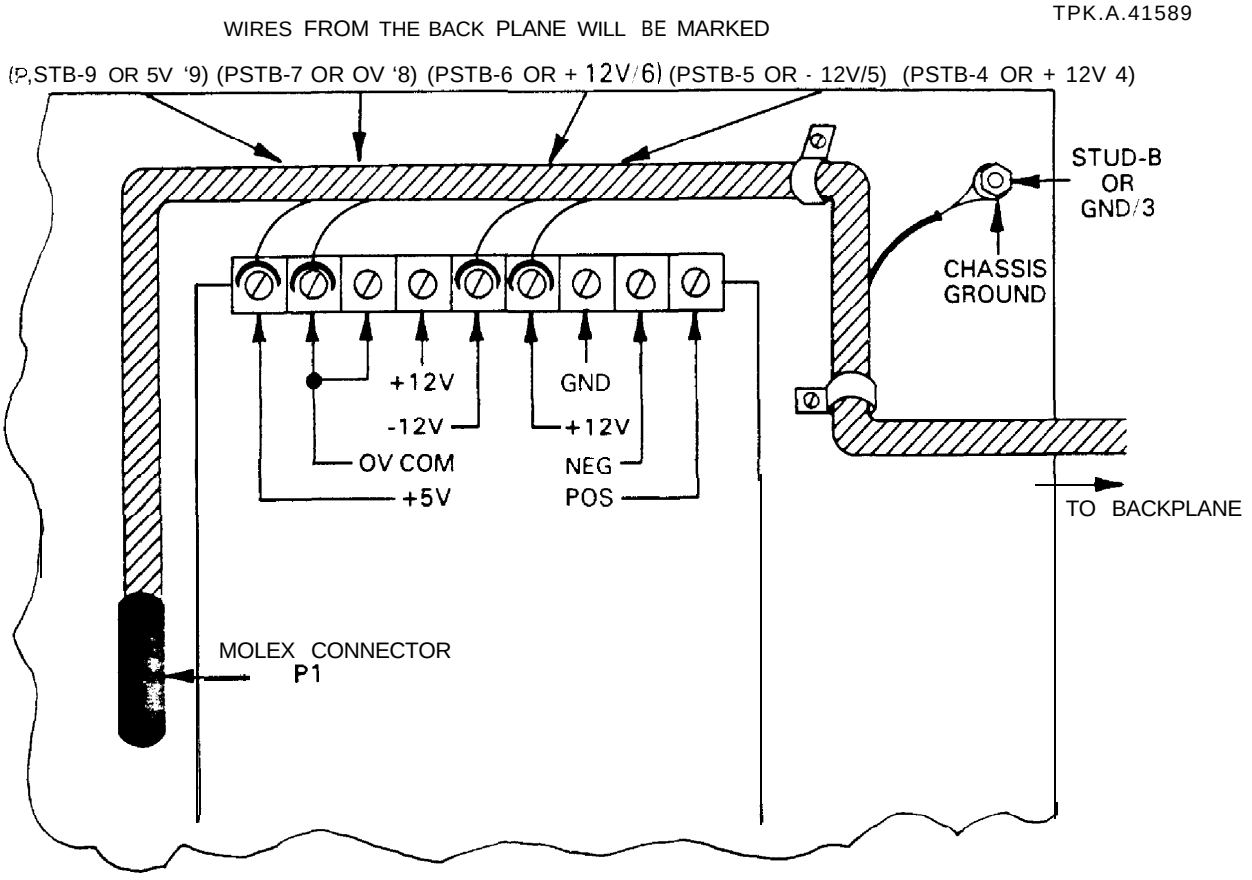


FIGURE 2. POWER SUPPLY EXTERNAL WIRING DIAGRAM

CAUTION

If a memory auxiliary battery is used, the circuit connecting it to this module should be isolated from the rest of the system. If this CAUTION is not observed, the battery could be short-circuited.

The alarm contacts consist of two sets of normally-opened and normal iy-closed contacts. The terminals marked "1 NO" and "1 NC" are associated with Alarm Type No. 1; the terminals marked "2 NO" and "2 NC" with Alarm type No. 2. (Refer to Series Six Plus User's Manual, GEK-96602, for further information on Alarm Nos. 1 and 2.)

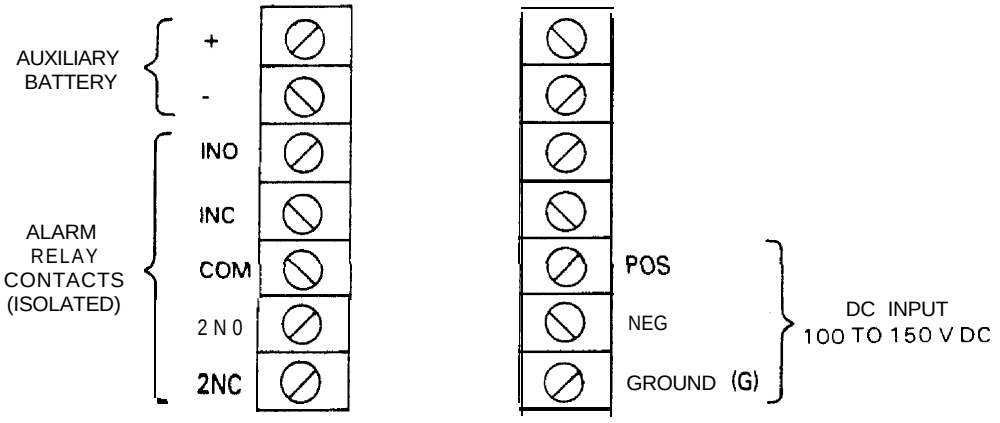
CAUTION

The user devices connected to each set of Alarm terminals on this module should present a resistive load drawing no more than one amp of current at no greater than 115 V ac/28 V dc. Failure to observe this CAUTION may result in damage to the circuit board.

NOTE

During normal operation the alarm relays are energized. During an alarm condition the contacts marked IN0 and 2NO, open, and those marked 1NC and 2NC, close.

Ref. PC-S6-84-0246



CONTACT RATING FOR DC INPUT TERMINALS IS 125V DC, 300 MA RESISTIVE

FIGURE 3. FRONT-PANEL TERMINAL BLOCK

ORDERING INFORMATION

Module	Part Number
125 V dc Input CPU Power Supply Module	IC600PM546

The UL symbol on the nameplate means the product is listed by Underwriters Laboratories Inc. (UL Standard No. 508, Industrial Control Equipment, subsection Electronic Power Conversion Equipment .)

For further information, contact your local GE Fanuc Automation Sales office.

GE FANUC AUTOMATION NORTH AMERICA, INC., CHARLOTTESVILLE, VIRGINIA

MARCH, 1987